ABSTRACT

THE INFLUENCE OF METHOXY GROUP ON SYNTHESIS CHALCONE AND ITS DERIVATE USING MICROWAVE

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The aim of this research is to determine the influence of methoxy group on synthesis chalcone, 4-methoxychalcone, 2,4-dimethoxychalcone, and 2,4,4'-trimethoxychalcone by comparing the yields of synthesis. Chalcone, 4-methoxychalcone, 2,4-dimethoxychalcone, and 2,4,4'-trimethoxychalcone were synthesized from benzaldehyde or 4-methoxybenzaldehyde and acetophenone or 2,4-dimethoxyacetophenone through *Claisen Schmidt* aldol condensation with catalyst NaOH and etanol as solvent. The synthesis was carried under microwave irradiation with the same condition and the structured were confirmed by UV-Vis Spectrophotometry, IR Spectrophotometry, and ^{1}H-NMR Spectrophotometry. The synthesis of chalcone and its derivate produce pale yellow crystal and the yield of chalcone is 72 ± 1,4%, the yield of 4-methoxychalcone is 90 ± 1.69%, the yield of 2,4-dimethoxychalcone is 73 ± 2.74% while synthesis of 2,4,4'-trimethoxychalcone was obtained 89 ± 1.17% yield. It can be conclude that methoxy group enhance the reactivity of aromatic ring of benzaldehyde which gave influence on the yields of product.

Keywords: synthesis, chalcone, 4-methoxychalcone, 2,4-dimethoxychalcone, 2,4,4'-trimethoxychalcone, *Claisen Schmidt* aldol condensation, methoxy group, microwave.